AC32

GB **Installation and maintenance instruction for air curtains**

IMPORTANT: Read these instructions before the product is installed and used.
Save the instructions for future use.....2

Art.nr: 172784-01

Assembly and operating instructions

Safety

- For all installations of electrically heated products should a residual current circuit breaker 300 mA for fire protection be used.
- Keep the areas around the air intake and exhaust grilles free from possible obstructions!
- CAUTION! During operation the surfaces of the unit can be hot!
- The unit must not be fully or partially covered with clothing, or similar materials, as overheating can result in a fire risk! (E)
- The appliance can be used by children, aged from 8 years and above, and by persons (children included) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
  Children shall not play with the appliance.
  Cleaning and user maintenance shall not be made by children without supervision.
  Children, of less than 3 years of age, should be kept away unless continuously supervised.
  Children, aged from 3 years and less than 8 years, shall only switch on/off the appliance, provided that it has been placed or installed in its intended normal operating position and they have been giving supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children, aged from 3 years and less than 8 years, shall not plug in, regulate and clean the appliance or perform user maintenance.

General Instructions

Read these instructions carefully before installation and use. Keep this manual for future reference.
The product may only be used as set out in the assembly and operating instructions. The guarantee is only valid if the product is used in the manner intended and in accordance with the instructions.

Application

AC32 is a compact air curtain with a recommended installation height of 3,2 metres. The air curtain has an integrated control system and can be remotely controlled. The air curtain is available without heat, with electrical heating and with water heating.

Protection class for units with electrical heating: IP20.
Protection class for units without heating and units with water heating: IP21.

Operation

Air is drawn in at the top of the unit and blown out downwards so that it shields the door opening and minimizes heat loss. To achieve the optimum curtain effect the unit must extend the full width of the door opening. The grille for directing exhaust air is adjustable and is normally angled outwards to achieve the best protection against incoming cold air.
The efficiency of the air curtain depends on the air temperature, pressure differences across the doorway and any wind pressure.
NOTE! Negative pressure in the building considerably reduces the efficiency of the air curtain. The ventilation should therefore be balanced.

Mounting

The air curtain unit is installed horizontally with the supply air grille facing downwards as close to the door as possible. Minimum distance from outlet to floor for electrically heated units is 1800 mm. For other minimum distances, see fig. 4.
Brackets and torx bit are enclosed in the gable end packaging upon delivery.

Mounting with wall brackets (fig. 6)

1. Mount the brackets on the wall, see fig.6A and dimension drawing fig.1. If the wall is uneven the brackets must be compensated for this.
2. Hook on the unit at the lower edge of the brackets. (Fig.6B-C)
3. Bend the top of the console over the unit and slide the units screws along the rail into the slots on the consoles, (Fig.6D). When the bracket is bent once, it must be replaced if bent back more than 45 °.
4. Lock the nuts against the brackets. (Fig.6E)

Horizontal mounting on the ceiling
Threaded rods, hanging brackets and ceiling mounting brackets for ceiling mounting are available as accessories, see accessories pages and separate manuals.

Electrical installation

The installation, which should be preceded by an omnipolar switch with a contact separation of at least 3 mm, should only be wired by a competent electrician and in accordance with the latest edition of IEE wiring regulations. The control system is pre-installed in the air curtain.

Unit without heating
Connected via the built-in control board with 1,5 m cord and plug.

Unit with water heating
Connected via the built-in control board with 1,5 m cord and plug.

Unit with electrical heating
The electrical connection is made on the top of the unit. See Fig.2. Power supply for heat (400V3N~) should be connected to a terminal block in the terminal box. 2-metre and longer units require dual power supplies. The largest cable diameter for the terminal block is 16 mm^2. The cable glands used must meet the protection class requirements. In the distribution board it is to be indicated that "the air curtains can be supplied from more than one connection".

See wiring diagrams.

Type	Output (kW)	Voltage (V)	Minimum area* (mm^2)
AC32-10-E08	8	400V3N~	2,5
AC32-15-E12	12	400V3N~	4
AC32-20-E16	16	400V3N~	6

**) Dimensioning of external wiring shall comply with applicable regulations and local deviations may occur.*

Start-up (E)

When the unit is used for the first time or after a long period of disuse, smoke or odour may result from dust or dirt that has collected on the element. This is completely normal and disappears after a short time.

Connecting the water coil (W)

The installation must be carried out by an authorised installer.
The water coil has copper tubes with aluminium fins and is suitable for connection to a closed water heating system. The heating coil must not be connected to a mains pressure water system or an open water system.
Note that the unit shall be preceded by a regulating valve, see VEAB valve kit.
The water coil is connected on top of the unit via steel pipes with DN20 (3/4") terminals, external thread. Flexible hoses are available as accessories, see accessories pages.
The connections to the heating coil must be equipped with shut off valves to allow problem free removal. Water coil is equipped with a drain valve. A vent valve should be connected at a high point in the pipe system.
Air valves are not included.

NOTE: Care must be taken when connecting the pipes. Use a wrench or similar to hold the air curtain connections to prevent straining of the pipes and subsequent water leakage during connection to water supply pipe-work.

Adjustment of the air curtain and air flow

The direction and speed of the air flow should be adjusted considering the load on the opening. Pressure forces affect the air stream and make it bend inwards into the premises (when the premises are heated and the outdoor air is cold).
The air stream should therefore be directed outwards to withstand the load. Generally speaking, the higher the load, the greater the angle that is needed.

Basic setting fan speed

The fan speed when the door is open is set using the control. Note that the air flow direction and fan speed may need fine adjustment depending on the loading of the door.

Filter (W)

The fan speed when the door is open is set using the control. Note that the air flow direction and fan speed may need fine adjustment depending on the loading of the door.

Service, repairs and maintenance

For all service, repair and maintenance first carry out the following:

1. Disconnect the power supply.
2. The front hatch is removed by removing the screws on the top of the unit and then detach the bent edge at the bottom. (Fig.3)
3. After the service, repair and maintenance reattach the front hatch. Place the hatch at the lower edge with the bent edge and fasten on top with screws.
4. Note that when carrying out work where the end is removed, the outlet grille also detaches.

Maintenance

Unit with water heating
The appliance filter should be cleaned regularly to ensure the air curtain effect and the heat emission from the device. How often depends on local circumstances.
A clogged filter is not a risk, but the appliance function can fail.

1. Disconnect the power supply.
2. The front hatch is removed by removing the screws on the top of the unit and then detach the bent edge at the bottom. (Fig.3)
3. Remove the filter and vacuum clean or wash it. If the filter is clogged or damaged, it may need to be changed.

All units:
Since fan motors and other components are maintenance free, no maintenance other than cleaning is necessary. The level of cleaning can vary depending on local conditions. Undertake cleaning at least twice a year. Inlet and exhaust grilles, impeller and elements can be vacuum cleaned or wiped using a damp cloth. Use a brush when vacuuming to prevent damaging sensitive parts. Avoid the use of strong alkaline or acidic cleaning agents.

Overheating

The air curtain unit with electric heater is equipped with an overheat protector. If it is deployed due to overheating, reset as follows:

1. Disconnect the electricity with the fully isolated switch.
2. Determine the cause of overheating and rectify the fault.
3. Remove the front hatch.
4. Press the red button located inside the air curtain unit, at the inner gable of the connection box.
5. Reattach the front hatch and connect the unit again.

All motors are equipped with an integral thermal safety cut-out. This will operate, stopping the air curtain should the motor temperature rise too high. The cut-out will automatically reset when the motor temperature has returned to within the motor's operating limits.

Temperature control

See control pages.

Replacing heating elements/heating package (E)

1. Mark and disconnect the cables to the heating elements/package
2. Remove the mounting screws securing the heating elements/package in the unit and lift the heating elements/package out.
3. Install the new heating elements/package in reverse order to the above.

Replacing the water coil (W)

1. Shut off the water supply to the unit.
2. Disconnect the connections to the water coil.
3. Detach the plastic ends.
4. Detach the intake grille by drilling out the rivet(s).
5. Remove the mounting screws securing the coil in the unit and lift the coil out.
6. Install the new coil in reverse order to the above.

Draining the water coil (W)

The drain valve is on the underside of the coil on the connector side. It can be accessed via the front hatch.

Trouble shooting

If the fans are not working or do not blow properly, check the following:
The functions and settings of the built-in control system.
That the intake grille/filter is not dirty.

If there is no heat, check the following:
The functions, internal sensor and settings of the built-in control system.

For units with electrical heating, also check the following:
Power supply to electric heater coil; check fuses and circuit-breaker (if any).
That the overheat protection for the motors has not been deployed.

For units with water coil, also check the following:
That the water coil is air free.
That there is enough water flow.
That incoming water is heated enough.

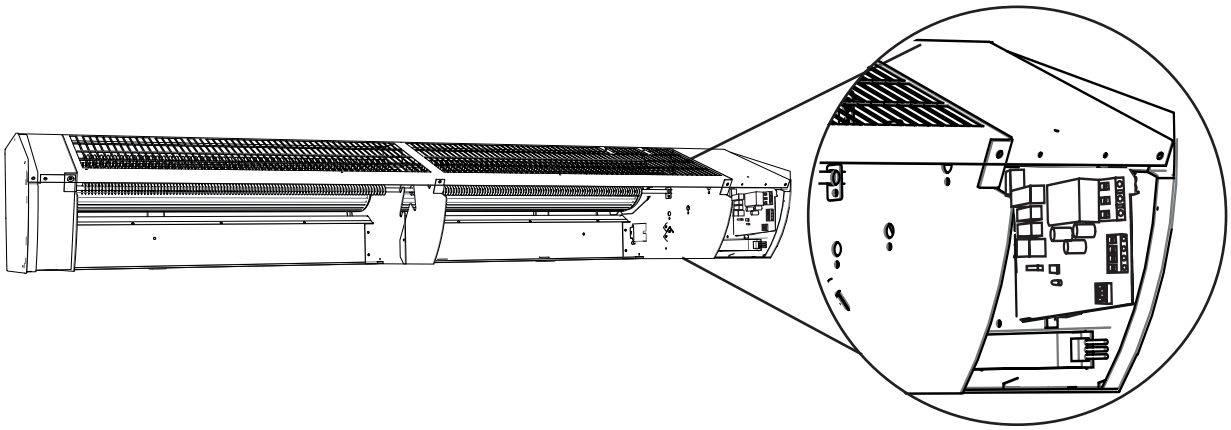
If the fault cannot be rectified, please contact a qualified service technician.

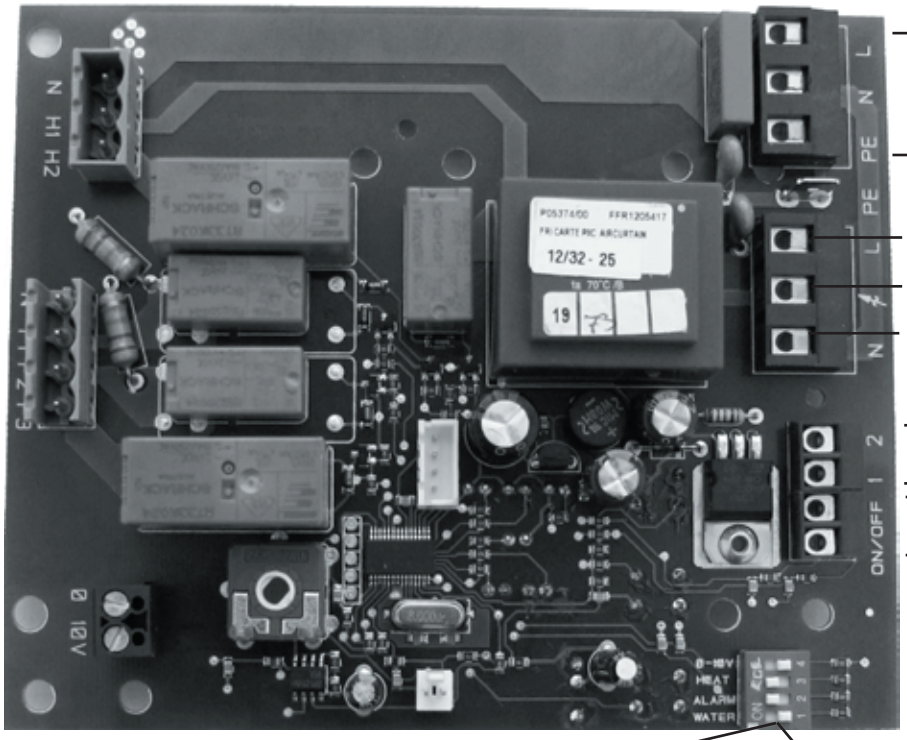
Residual current circuit breaker (E)

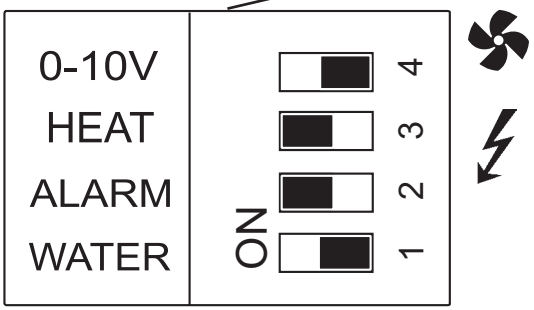
When the installation is protected by means of a residual current circuit breaker, which trips when the appliance is connected, this may be due to moisture in the heating element. When an appliance containing a heater element has not been used for a long period or stored in a damp environment, moisture can enter the element.
This should not be seen as a fault, but is simply rectified by connecting the appliance to the main supply via a socket without a safety cut-out, so that the moisture can be eliminated from the element. As a preventive measure, the unit should occasionally be run for a short time when it is not being used for extended periods of time.

Controls

The air curtain has an integrated control system and can be remotely controlled.

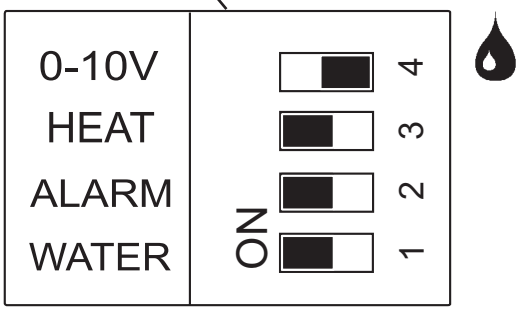






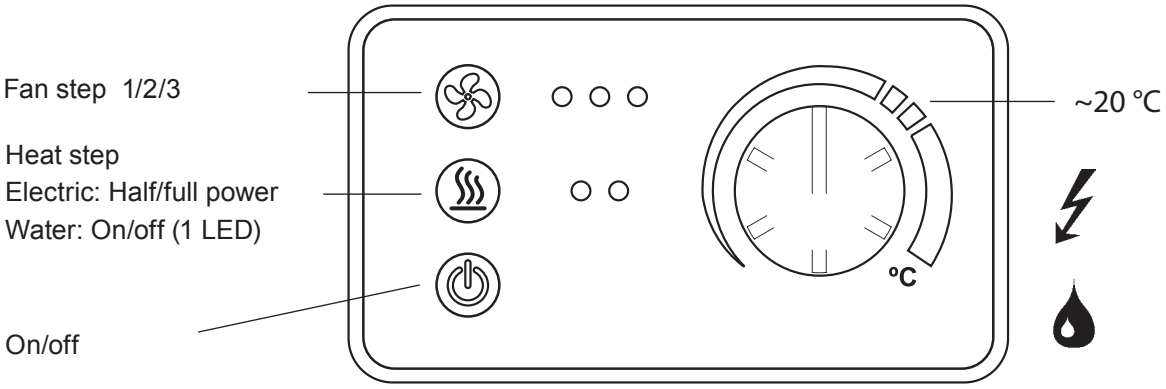
Factory setting dip-switches - Unit without heating or with electrical heating

Dip-switch 3 is used for PL2DR (optional).

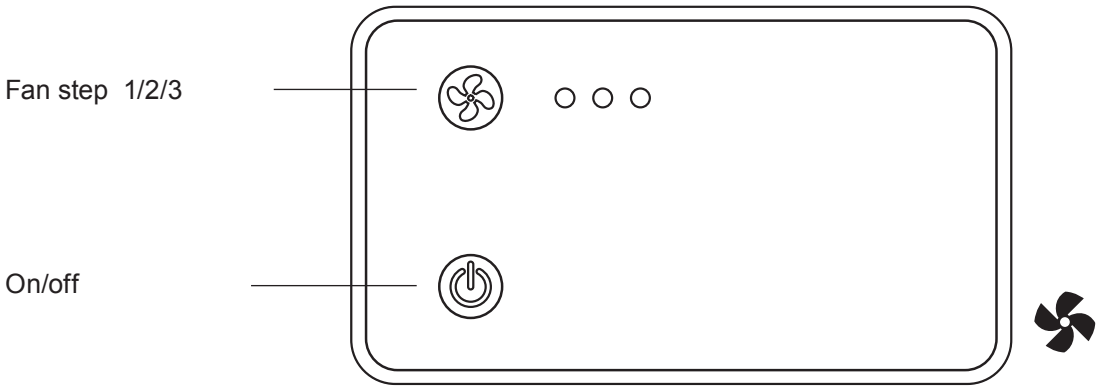


Factory setting dip-switches - Unit with water heating

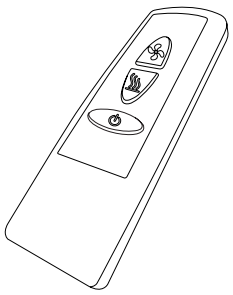
Dip-switch 3 is used for PL2DR (optional).



Control panel
Units with electric heating and water heating



Control panel
Units with no heat



Remote control - on/off, fan steps and heating steps

Functional test

Functional test is started using the remote control.

Push

and

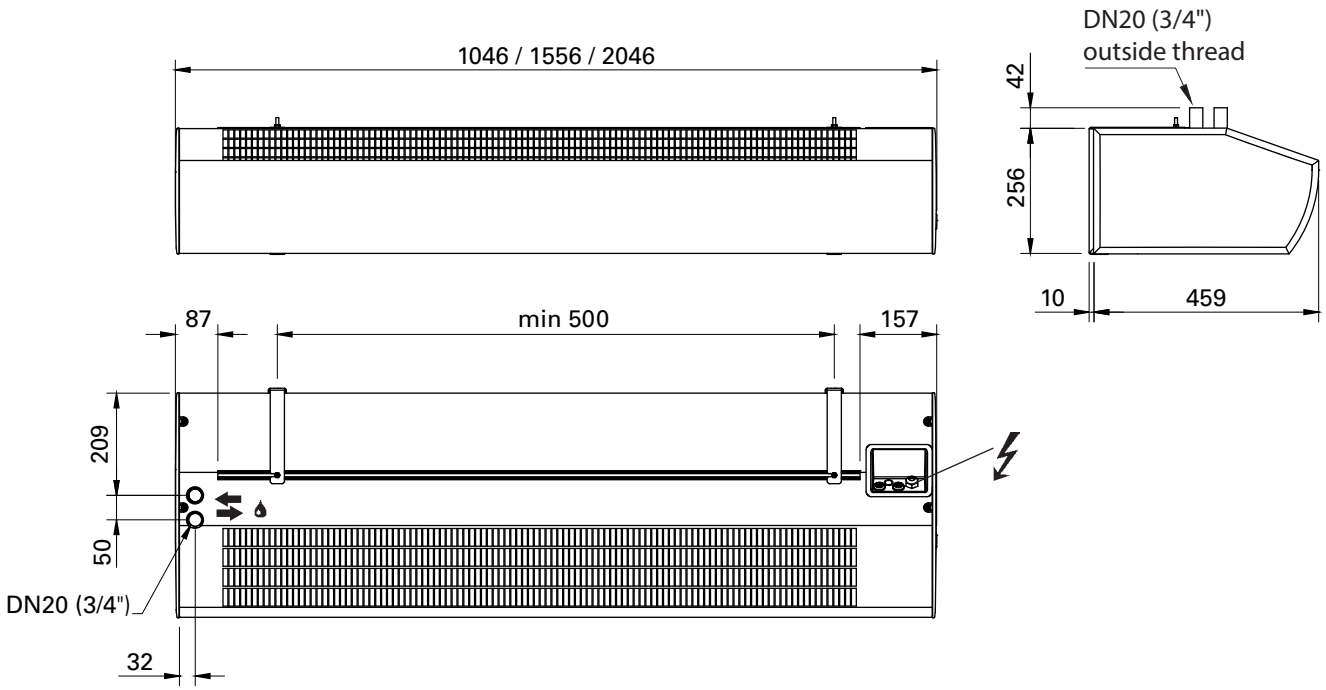
in 5 seconds

Fan and heatings steps are tested in 10-second intervals which is indicated by lighted LEDs. When the test is completed, all LEDs will flash for 30 seconds.

Temperature control

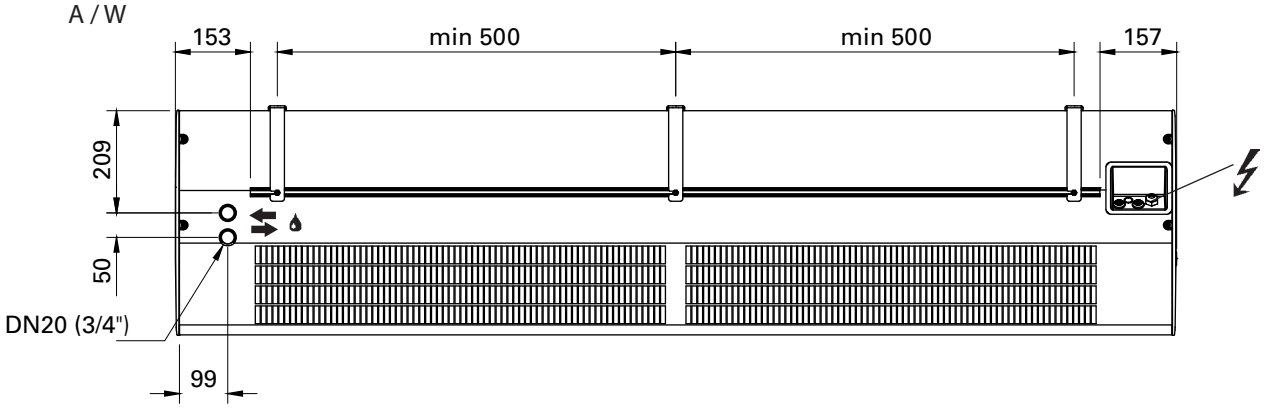
If the temperature exceeds 50 °C, the fan runs at full speed for 2 minutes to vent out the heat, if the temperature rises above 50 °C again during the following 5 minutes overheating alarm is deployed. The red LEDs flash and all the buttons are locked.

1. Disconnect the electricity with the fully isolated switch.
2. Determine the cause of overheating and rectify the fault.
3. Connect the unit again.


1046 / 1556 / 2046
DN20 (3/4")
outside thread
42
256
10
459
87
min 500
157
209
50
DN20 (3/4")
32

L = 2 m

A / W


153
min 500
min 500
157
209
50
DN20 (3/4")
99

E

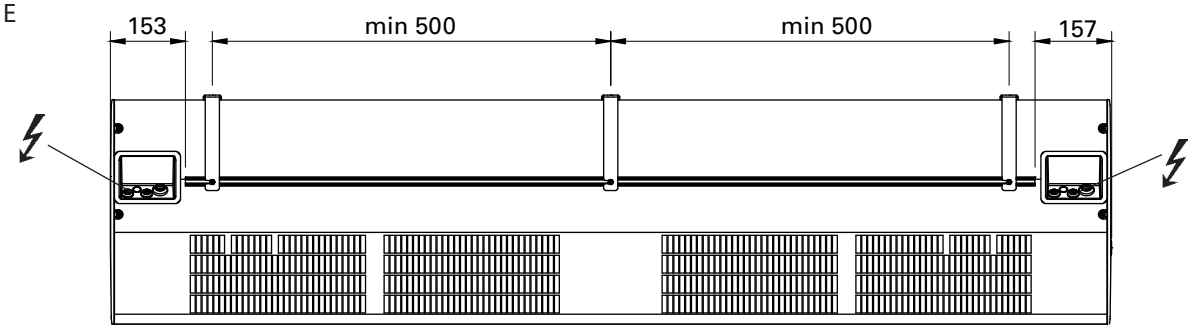

153
min 500
min 500
157

Fig. 1

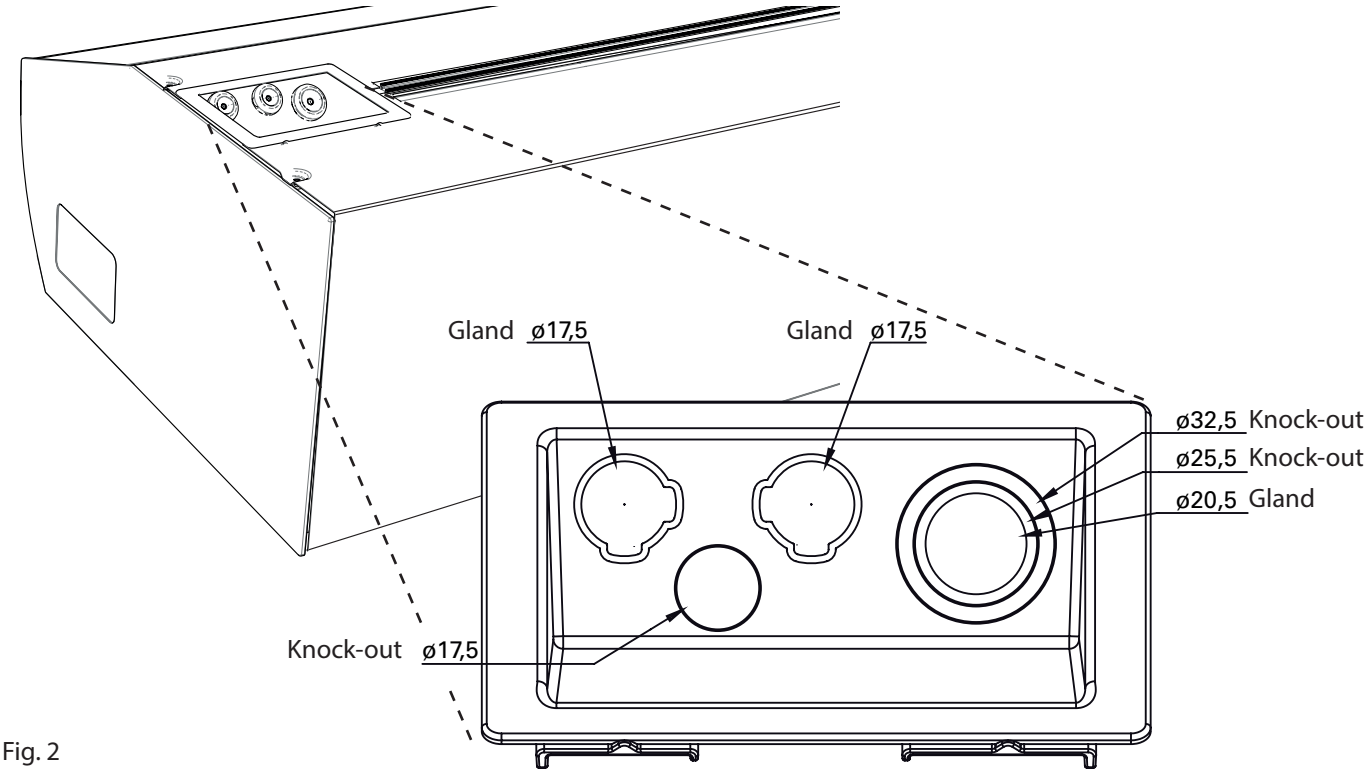


Fig. 2

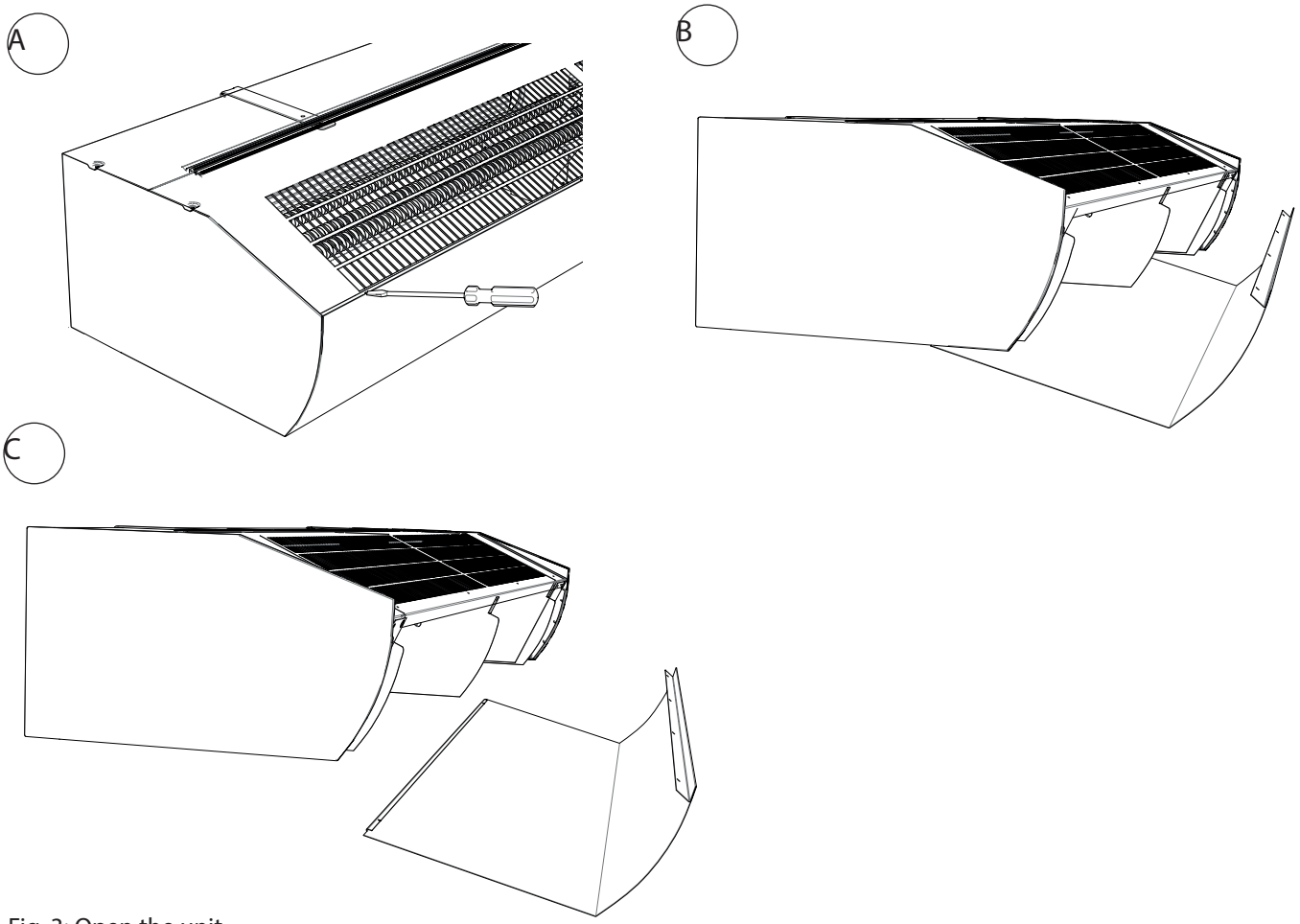


Fig. 3: Open the unit.

Minimum distance

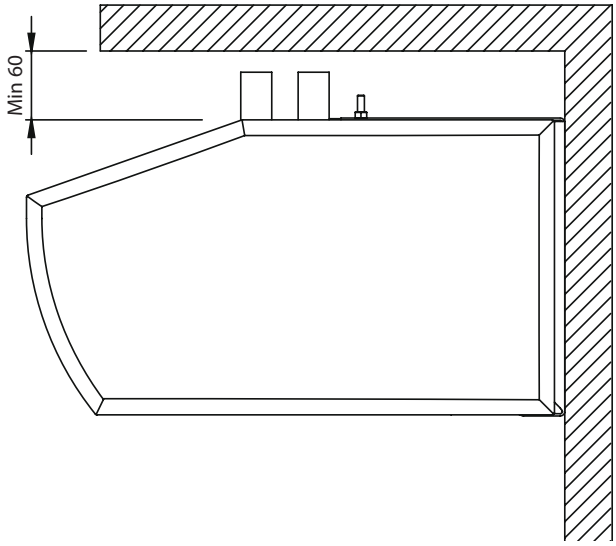


Fig. 4

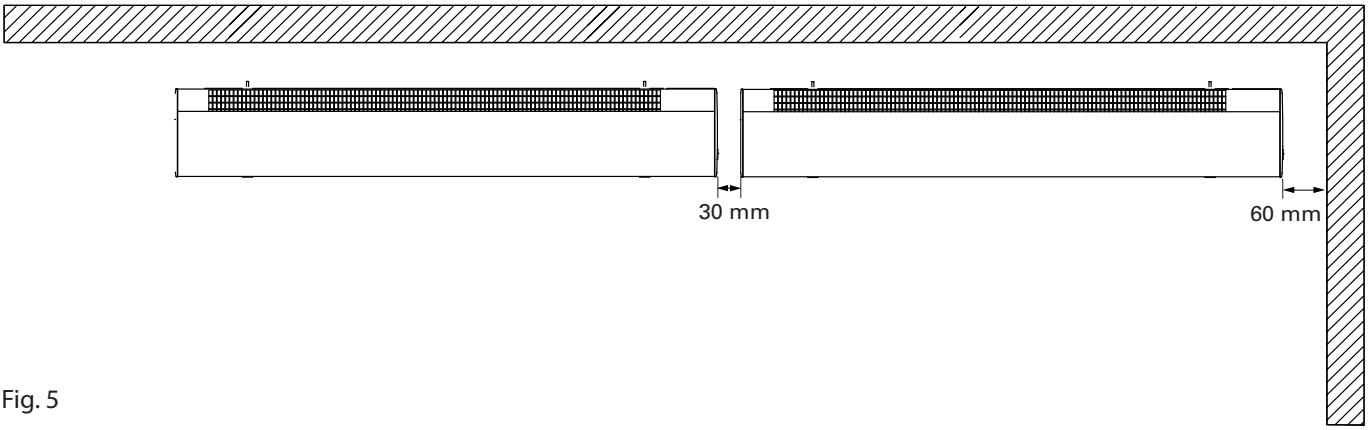
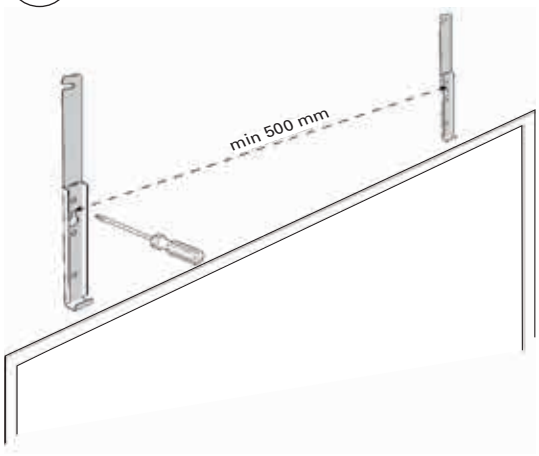
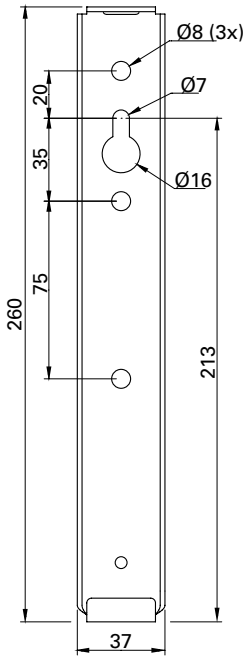


Fig. 5

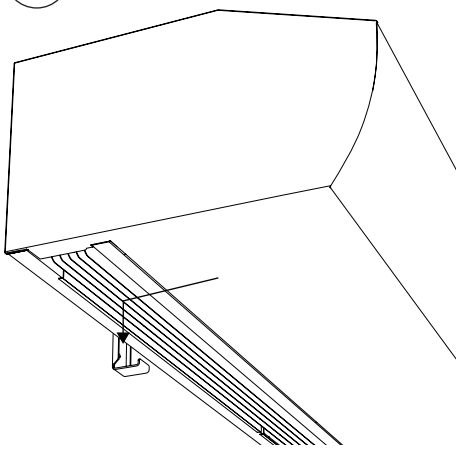
Mounting with wall brackets

A



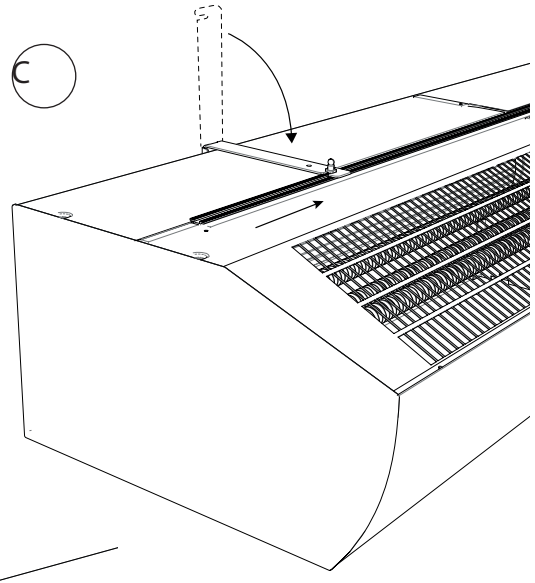


B



AC32-10	2 pcs
AC32-15	2 pcs
AC32-20	3 pcs

C



D

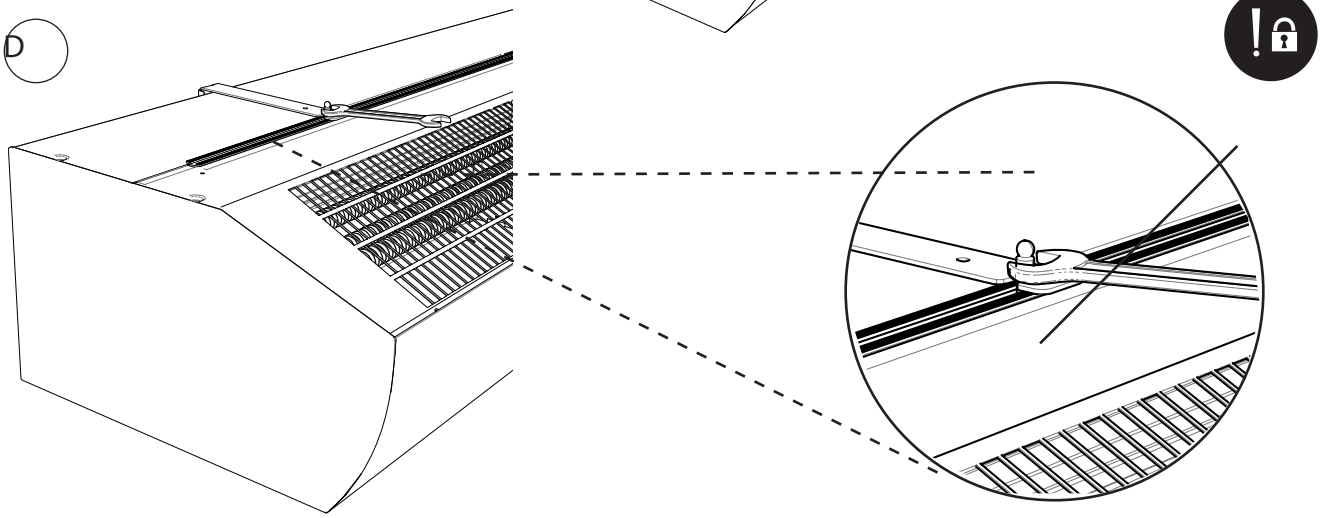
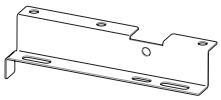


Fig. 6: Mounting with wall brackets

Mounting accessories

PA2PF15	Ceiling mounting bracket for 1 and 1.5 meter unit	AC32-10, AC32-15	Pendulum brackets for unit mounting and ceiling bracket for mounting on the ceiling using hangers or threaded rods (not included).
PA2PF20	Ceiling mounting bracket for 2 meter unit	AC32-20	
PA34TR15	Threaded rods for 1 and 1.5 meter unit Length: 1 m Units: 4 pcs	AC32-10, AC32-15	Threaded rods for ceiling mounting. Used with ceiling mounting brackets PA2PF.
PA34TR20	Threaded rods for 2 meter unit Length: 1 m Units: 6 pcs	AC32-20	
PA2P15	Pendulums for 1 and 1.5 meter unit Length: 1 m Units: 2 pcs	AC32-10, AC32-15	Pendulum brackets for mounting the unit suspended from the ceiling. The pendulum brackets are covered by a white plastic duct to hide the cables. The brackets may be cut to the desired length should shorter suspension heights than 1 m be desired. Used with ceiling mounting brackets PA2PF.
PA2P20	Pendulums for 2 meter unit Length: 1 m Units: 3 pcs	AC32-20	

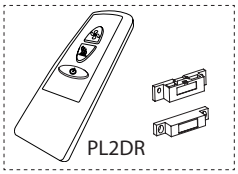

PA2PF

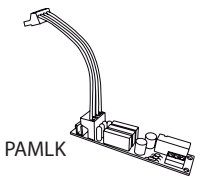
PA34TR

PA2P

Optional features

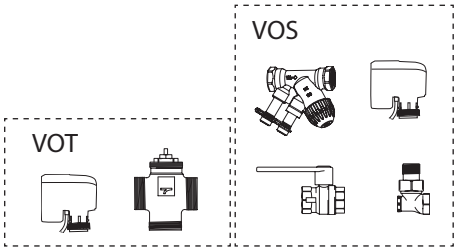
PL2DR	Door switch with remote control	AC32	Door switch control with a special remote control for the Auto mode. With a door switch and operating in Auto mode, the fan starts/stops with the door open/ closed. The automatic system enables selection of maintenance heating when the door is closed.
PAMLK	Motor alarm board	AC32	Provides a potential free alarm connection when thermal contact is triggered in the motor. Installed in the air curtain.


PL2DR

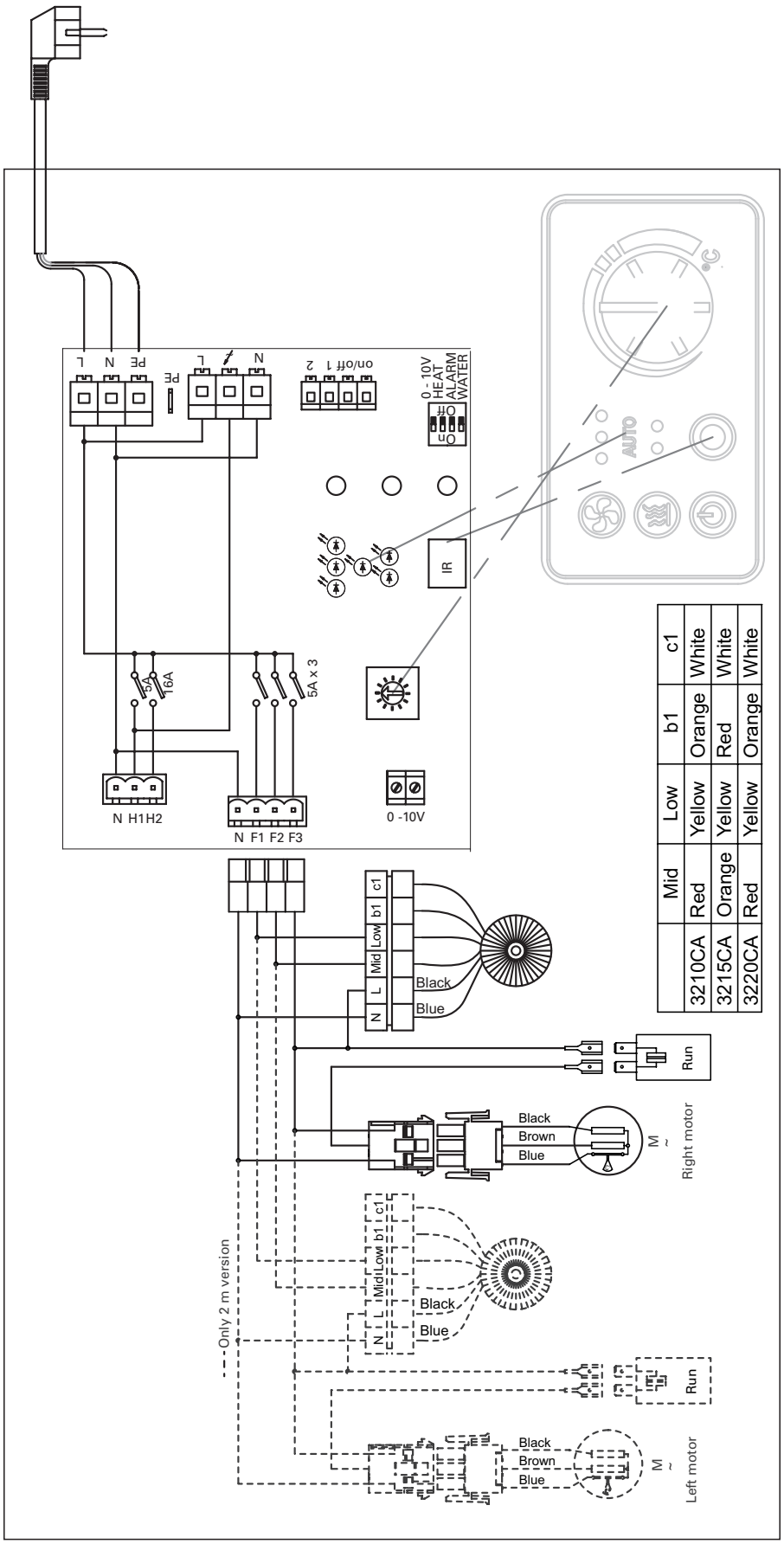

PAMLK

Control valves for water systems (optional)

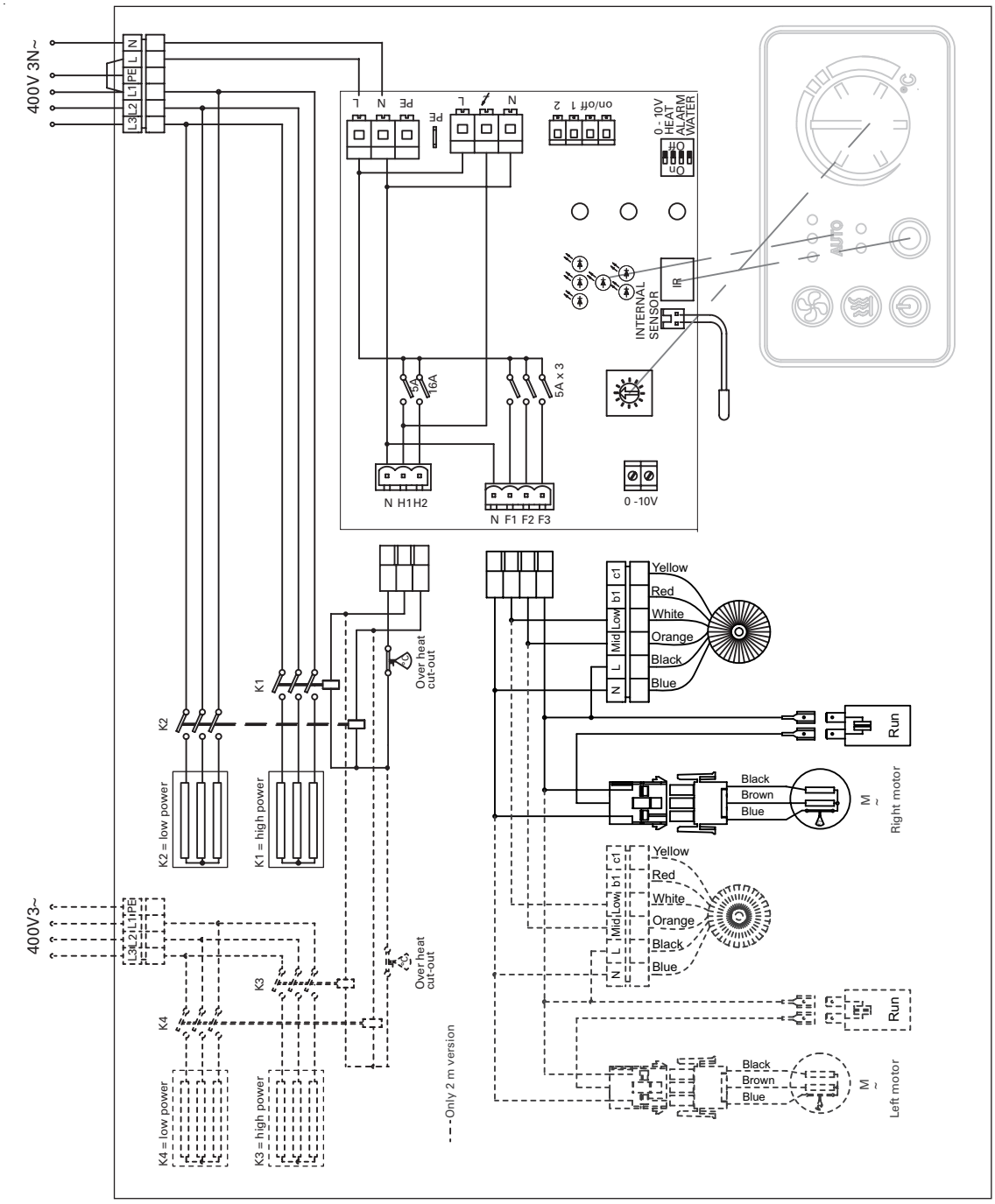
Type	Connection
VOS15LF	DN15
VOS15NF	DN15
VOS20	DN20
VOS25	DN25
VOT15	DN15
VOT20	DN20
VOT25	DN25



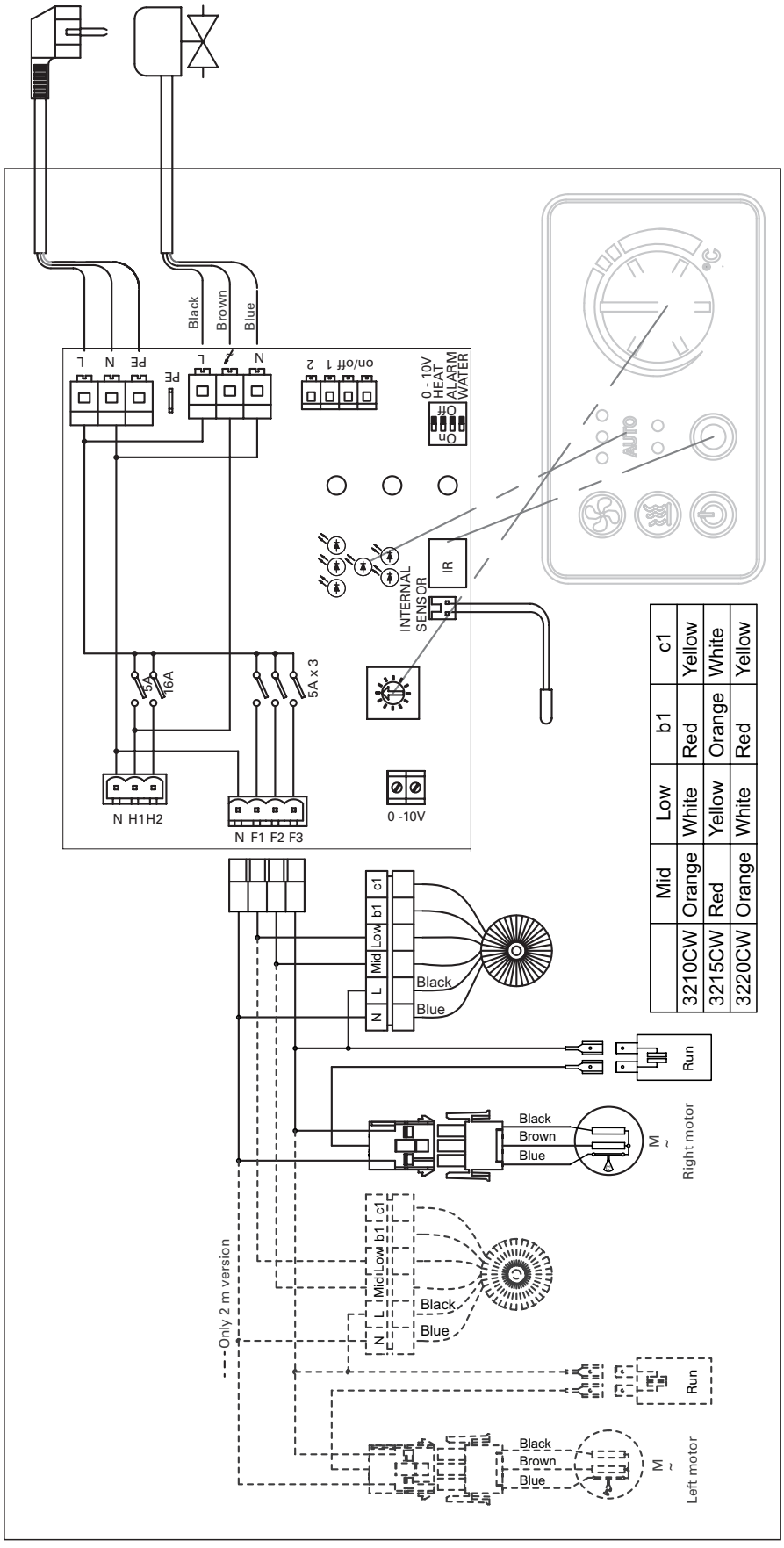
AC32-10-A / AC32-15-A / AC32-20-A



AC32-10-E8 / AC32-15-E12 / AC32-20-E16

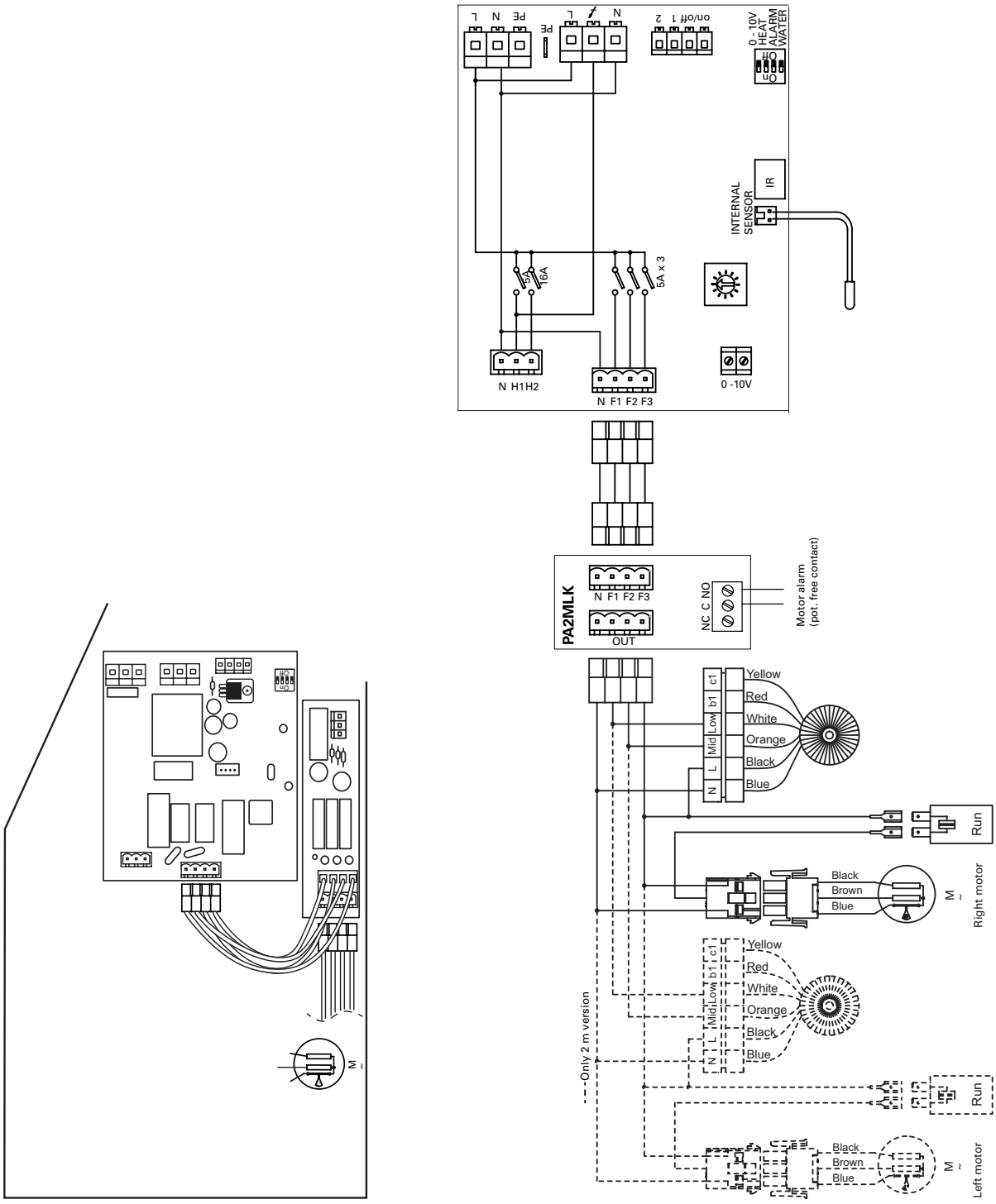


AC32-10-W / AC32-15-W / AC32-20-W



	Mid	Low	b1	c1
3210CW	Orange	White	Red	Yellow
3215CW	Red	Yellow	Orange	White
3220CW	Orange	White	Red	Yellow

PAMLK


L N PE
PE L N
on/off 1 2
0 - 10V
HEAT
ALARM
WATER
Off
On
INTERNAL SENSOR
IR
5A x 3
N H1H2
N F1 F2 F3
0 -10V
PA2MLK
N F1 F2 F3
OUT
NC C NO
Motor alarm
(pot. free contact)
Yellow
Red
White
Orange
Black
Blue
c1
b1
Low
Mid
L
N
Run
Black
Brown
Blue
M
~
Right motor
Only 2 m version
Left motor

NB: We reserve us from typographical errors and the right to make changes and improvements to the contents of this manual without prior notice.

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